

## CLAIMS

Having thus described my invention, I claim:

1. A structural reflective insulating material comprising:
  - 2 a first outer layer of metal foil;
  - 3 an adhesive binding coating material on an inner side of said first outer
  - 4 layer of reflective foil;
  - 5 at least a first layer of foam material secured to said first layer of said
  - 6 reflective foil;
  - 7 at least one layer of mesh material sandwiched between at least said first
  - 8 layer of foam material and at least a second layer of foam material;
  - 9 at least a second layer of foam material;
  - 10 a coating or adhesive binding material between at least a second layer
  - 11 of foam material and at least a second inner layer of reflective foil; and
  - 12 at least a second layer of reflective foil bound to at least a second layer
  - 13 of foam material by the adhesive binding material.
1. The structural reflective insulating material of claim 1 wherein at least  
2 one of said first outer and second inner layers of reflective ~~foil~~ is aluminum.
1. The structural reflective insulating material of claim 1 wherein at least  
2 one of the first and second layers of foam material comprise polyethylene foam.
1. The structural reflective insulating material of claim 2 wherein at least  
2 one of the first and second layers of foam material comprise polyethylene foam.

foil  
adhesive  
foam  
mesh  
foam  
adhesive  
foil

1        5. The structural reflective insulating material of claim 1 wherein the  
2 coating of adhesive binding material is polyurethane.

1        6. The structural reflective insulating material of claim 2 wherein the  
2 coating of adhesive binding material is polyurethane.

1        7. The structural reflective insulating material of claim 3 wherein the  
2 coating of adhesive binding material is polyurethane.

1        8. The structural reflective insulating material of claim 4 wherein the  
2 coating of adhesive binding material is polyurethane.

1        9. The structural reflective insulating material of claim 1 wherein the mesh  
2 material is one from a group consisting of aluminum or galvanized steel.

1        10. The structural reflective insulating material of claim 2 wherein the mesh  
2 material is one from a group consisting of aluminum or galvanized steel.

1        11. The structural reflective insulating material of claim 3 wherein the mesh  
2 material is one from a group consisting of aluminum or galvanized steel.

1        12. The structural reflective insulating material of claim 4 wherein the mesh  
2 material is one from a group consisting of aluminum or galvanized steel.

1           13. The structural reflective insulating material of claim 5 wherein the mesh  
2       material is one from a group consisting of aluminum or galvanized steel.

1           14. The structural reflective insulating material of claim 6 wherein the mesh  
2       material is one from a group consisting of aluminum or galvanized steel.

1           15. The structural reflective insulating material of claim 7 wherein the mesh  
2       material is one from a group consisting of aluminum or galvanized steel.

1           16. The structural reflective insulating material of claim 8 wherein the mesh  
2       material is one from a group consisting of aluminum or galvanized steel.

1           17. A method of manufacturing a structural reflective insulating material  
2       comprising the steps of:

3                          coating a first layer of reflective foil on one side with an adhesive  
4                          binding material;

5                          placing a first layer of foam material against the coating;

6                          laying a mesh material on the first layer of foam material;

7                          placing a second layer of foam material over the mesh material;

8                          coating a second layer of reflective foil on one side with an

9                          adhesive binding material;

10                    placing the second layer of reflective foil with the side coated  
11                    with an adhesive binding material against the second layer of foam  
12                    material; and

13                    running the material through a heat press to bind all layers of  
14                    material together to form an integral structural reflective insulating  
15                    material.

1                 18. A method of making an air duct from a structural reflective insulating  
2                 material comprised of a first outer layer of reflective foil; an adhesive binding  
3                 coating material on an inner side of said first outer layer of reflective foil; at least  
4                 a first layer of foam material secured to said first layer of said reflective foil; at least  
5                 one layer of mesh material sandwiched between at least said first layer of foam  
6                 material and at least a second layer of foam material; at least a second layer of foam  
7                 material; a coating or adhesive binding material between the at least a second layer  
8                 of foam material and the at least a second inner layer of reflective foil; and the at  
9                 least a second inner layer of reflective foil, comprising the steps of;

10                 folding a piece of the structural reflective insulating material as  
11                 many times as necessary so that ends of the piece form a channel; and  
12                 securing the ends together by securing means to form a desired  
13                 configuration.

1                 19. The method of forming the air duct in claim 18 wherein the securing  
2                 means consists of metallic tape.

1        20. The method of forming the air duct in claim 18 wherein the desired  
2 configuration is substantially rectangular.

1        21. The method of forming the air duct in claim 18 wherein the desired  
2 configuration is substantially circular.

1        22. The method of forming the air duct of claim 21 wherein the securing  
2 means further comprises an inward curved hook on one end of the material and an  
3 outward curved hook on a second end, said curved hooks being interconnected to  
4 lock the duct in the substantially circular configuration.

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